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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/783,163

02/19/2004

Peter C. Salmon

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EXAMINER

SANDVIK, BENJAMIN P

ART UNIT

PAPER NUMBER

2826

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

04/20/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/783,163

Applicant(s)

SALMON, PETER C.

Examiner

Ben P. Sandvik

Art Unit

2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) 1-11 and 19-35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of claims 12-18 in the reply filed on 12/21/2005 is acknowledged.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 13, 15, and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Shim et al (U.S Patent #6683377).

With respect to **claim 13**, Shim teaches an electrically conductive substrate (Fig. 1, 10 and Col 2 Ln 43-44, "a metal layer"); a multi-layer interconnection circuit (Fig. 1, 12, 17, 11, etc. formed multi-layer laminated used for interconnection) having conductive traces (Fig. 1, 12) fabricated on said substrate and at least two attachments sites wherein each of said attachment sites includes a plurality of attachment terminals (Fig. 1E, 15) and each of said terminals connects with a selected trace of said interconnection circuit.

With respect to **claim 15**, Shim teaches that said multilayer interconnection circuit comprises interconnecting layers (Fig. 1D, patterned layers 15) of copper conductors (Col 2 Ln 45) embedded in dielectric material (Fig. 1, 17).

With respect to **claim 16**, Shim teaches that selected ones of said copper conductors are arranged in said dielectric material to form transmission lines (Fig. 1, copper wires connected chips 20 and 21) having a characteristic impedance (copper is a material having a characteristically low impedance).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 14 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shim, in view of Moon (U.S. PG Pub #2002/0030975).

With respect to **claims 14 and 17**, Shim does not teach that the attachment terminals are gold stud bumps, or that the pitch of the attachment terminals is 100 microns or less. Moon teaches gold bump attachment terminals having a pitch of less than 100 microns (Paragraph 35, "0.075 mm"). It would have been obvious to one of ordinary skill in the art at the time the invention was

made arrange the attachment terminals of Shim with a pitch of less than 100 microns as taught by Moon in order to increase the density of terminals.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shim, in view of Emoto (U.S. Patent #6441476).

With respect to **claim 18**, Shim does not teach that the cable includes multiple branches; wherein at least one of said attachment sites is provided in each of said braches. Emoto teaches a cable that has multiple branches (Fig. 6, 73a-d), with attachment sites in each branch (Fig. 6, 17 and 89). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide multiple branches in the cable of Shim as taught by Emoto in order to improve the electrical properties by using short wirings.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ben P. Sandvik whose telephone number is (571) 272-8446. The examiner can normally be reached on Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sue Purvis can be reached on 571-272-1236. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

bps


EVAN PERT
PRIMARY EXAMINER